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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,980	01/04/2002	Yves Charlier	31223-81174 (F-784)	3014

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EXAMINER

ASINOVSKY, OLGA

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 04/08/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/936,980

Applicant(s)  
Charlier

Examiner  
Olga Asinovsky

Art Unit  
1711



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 4, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☒ Claim(s) 5, 6, and 8 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 4, 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 6) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al U.S. Patent 5,560,886.

The present invention is a polypropylene having improved long chain branching and increased melt strength wherein a said polypropylene is produced by irradiating polypropylene with an electron beam having an energy of at least 5 MeV with a radiation dose of from 5 to 100 kGray in the presence of a grafting agent.

Saito discloses a process for producing a modified polypropylene, which is produced by irradiating a low dosage of ionizing radiations upon a mixture of a polypropylene with a crosslinking auxiliary, column 1, lines 63-65. The ionizing radiation can be obtained by using electron rays, column 6, lines 53- 64, in the radiation dose in a range preferably of 0.5 to 10 kGray, column 7, lines 7-8. The radiation dose for producing a modified polypropylene in Saito invention is readable in the present claims 1, 2 and 7. Crosslinking auxiliaries specified at column

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5, line 60 through column 6, line 21 are within the scope of a grafting agent for the present claims 1, 3 and 7. The degree of branching is substantially 1, column 3, lines 31-39, and its practical value refers to about 0.95, column 3, line 38. Saito discloses that the term “substantially 1” means that the long chain branch is below its detection limit. Therefore, the branching degree in Saito would be readable in the present claim 1 in the phrase “improved long chain branching,” and less than 1 for the present claim 7. The amount of the crosslinking auxiliary in the range from 0.1 to 4 mmols based on 100 g of linear polypropylene is readable in applicants’ claim 4. The obtained polypropylene has a very high melt tension, stiffness and moldability, column 8, lines 9-19. The applicants’ claimed “increased melt strength” would be inherent for the modified polypropylene in Saito.

The difference between the present claims and Saito is the requirement in the present claims 1 and 7 that the irradiation process is obtained with an electron beam energy of at least 5 MeV. However, it would have been obvious to one of ordinary skill in the art to consider that the irradiation condition with an electron ray energy of at least 5 MeV can be obtained in Saito’s invention, because Saito discloses that in the case of electron rays the irradiation in a large amount of radiations is possible, column 6, line 66 and column 7, lines 1-3. The motivation is that it is obvious to control the irradiation method for producing a modified polypropylene in Saito invention with an electron beam energy of at least 5 MeV, since the radiation dose is within the range specified in the present claims.

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***Claim Rejections - 35 USC § 112***

2. Claims 5, 6 and 8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5, 6 and 8 have not been further treated on the merits.
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art is relevant to show the state of the art knowledge.

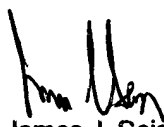
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is (703) 308-0041. The examiner can normally be reached on Monday to Friday from 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 and (703) 872-9311 after final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

O.A.  
O.A.

April 6, 2003

  
James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700